

the beam splitting and receiving unit is coupled to the measuring probe via the optical fiber arrangement; and

phase differences of signals from individual detectors of the photo-detector matrix are used for determining the one of the shape and the distance of the rough surface.

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19. (New) The measuring device according to claim 11, wherein:
the measuring probe has a beam splitter, the measuring probe being one of a Michelson interferometer and a Mirau interferometer; and
an optical path difference produced in the measuring arm and the reference arm compensates for the optical path difference produced by the time delay element.
20. (New) The measuring device according to claim 14, further comprising:
a second beam splitting and receiving unit arranged in the unit; and
a reference probe having a reference arm and a measuring arm, the reference probe being coupled to the unit via a second optical fiber arrangement, a second beam path being formed from the second beam splitter to the reference probe.
21. (New) The measuring device according to claim 11, wherein:
the measuring device is used for measuring an internal geometry of a borehole.

Remarks

This Preliminary Amendment cancels, without prejudice, claims 1-11 in the underlying PCT Application No. PCT/DE99/00433. This Preliminary Amendment also cancels, without prejudice, claims 1-10 of the revised pages of the Preliminary Examination Report, and adds new claims 11-21. The new claims conform the claims to U.S. Patent and Trademark Office rules and do not add new matter to the application.

The above amendments to the specification and abstract conform the specification and abstract to U.S. Patent and Trademark Office rules, and do not introduce new matter into the application.

The underlying PCT Application No. PCT/DE99/00433 includes an International Search Report, dated July 22, 1999. The Search Report includes a list of documents that were uncovered in the underlying PCT Application. A copy of the Search Report is included herewith.

The underlying PCT Application No. PCT/DE99/00433 also includes a Preliminary Examination Report, dated May 16, 2000. An English translation of the Preliminary Examination Report is submitted herewith.

It is respectfully submitted that the subject matter of the present application is new, non-obvious, and useful. Prompt consideration and allowance of the application are respectfully requested.

Respectfully submitted,

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